Global Precipitation Measurement (GPM) Mission

NASA Precipitation Processing System (PPS)

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Topics

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- Overview of data products
- Current PPS Operational Concept
- Key GPM data exchange principles
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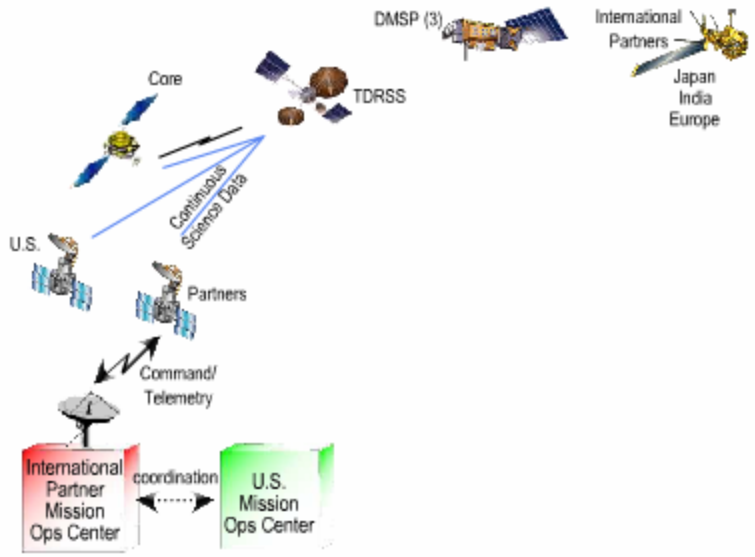
Purpose of PPS

- **The Precipitation Processing System (PPS) is a measurement based data processing and information system**
  - NASA's contribution to the GPM mission
  - Processes data from NASA precipitation instruments
  - Inter-calibrates partner radiometer brightness temperatures to the GPM core
  - Data system interface to the NASA Mission Operations center
- **Interface to GPM partner data centers providing partners with access to all GPM data**
- **Interface to GPM data users (science and applications) to GPM data**
- **Provide a near-real-time GPM Microwave Imager (GMI) data both brightness temperatures and rain retrieval included merged 3 hr global rain products**

Overview of GPM Data Products

- **These are currently being discussed and are not final**
- **Two classes of products**
  - Near-real-time
    - GMI within 1 hour of collection of data
    - GPM Core PR data (upon receipt from JAXA)
    - Merged radiometer 3-hr products where oldest bit in product no more than 6 hours old (completeness depends to a large extent upon provision of partner data)
  - Research Quality-within 48 hours of receiving all required inputs
    - Level 1 --- GMI radiometer brightness temperatures and PR powers
    - Level 1C—Intercalibrated partner radiometer Tb; PR reflectivities
    - Level 2 – GMI, PR rain retrievals in IFOV; merged radiometer products
    - Level 3 – Merged 3 hour global rain products; individual instrument time and space averaged rain products; GIS formatted rain retrievals (currently seen mostly a rain accumulations)
    - Level 4 –merger of remote sensed and model data

PPS/GPM Ops Concept



Key GPM Data Exchange Principles

- **To be useful GPM data must be quickly and freely be exchanged among GPM partners**
- **GPM partners must be free to distribute all GPM data including inter-calibrated brightness temperature data to all other partners without restrictions**
- **GPM should make its data products available to applications users and scientists**
  - as quickly as transmission latencies allow
  - without restrictions or major limitations
  - without periods of proprietary embargoes (like TRMM)
  - from the closest server that provides the best and fastest access for the user.
- **GPM shall provide sufficient information about data products so that users understand their science basis.**

PPS Summary

- **NASA is contributing the precipitation measurement data system PPS to support the GPM mission**
- **PPS will distribute all GPM data products including NASA's GMI data products freely and quickly**
- **PPS is implementing no system mechanisms for restricting access to GPM data**
- **PPS is implementing no system mechanisms for charging for GPM data products**
- **PPS will provide a number of geographical and parameter subsetting features available to its users**
- **The first implementation of PPS (called PPS--) will assume processing of TRMM data effective 1 June 2008**
- **TRMM realtime data will be available via PPS– to all users requesting access (send request to Erich.F.Stocker@nasa.gov)**